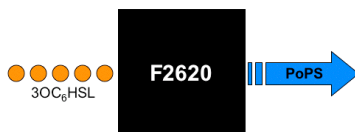


# BBa\_F2620

3OC<sub>6</sub>HSL → PoPS Receiver

[http://parts.mit.edu/registry/index.php/Part:BBa\\_F2620](http://parts.mit.edu/registry/index.php/Part:BBa_F2620)



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## Description

A transcription factor (LuxR, BBa\_C0062) that is active in the presence of cell-cell signaling molecule 3OC<sub>6</sub>HSL is controlled by a TetR-regulated operator (BBa\_R0040). Device input is 3OC<sub>6</sub>HSL. Device output is PoPS from a LuxR-regulated operator. If used in a cell containing TetR then a second input signal such as aTc can be used to produce a Boolean AND function.

## Characteristics

**Input Swing:** 1E-9 to 1E-6 M 3OC<sub>6</sub>HSL, exogenous

**Output Swing:** 0±1 to 503±1 GFP molecules cfu<sup>-1</sup> s<sup>-1</sup>

**Switch Point:** 7±1 nM 3OC<sub>6</sub>HSL, exogenous

**LH Response:** 9 min (t<sub>50%</sub>), 27 min (t<sub>90%</sub>)

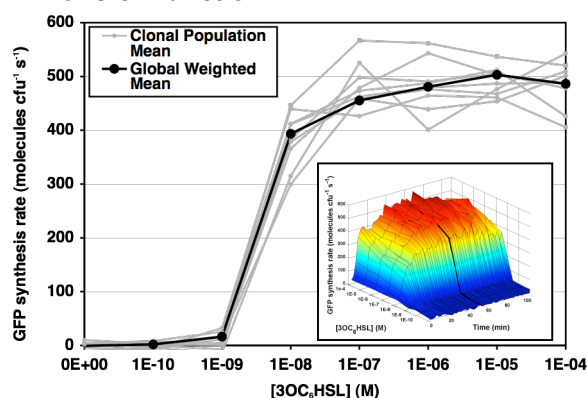
## Key Parts

BBa\_R0040: TetR-regulated operator

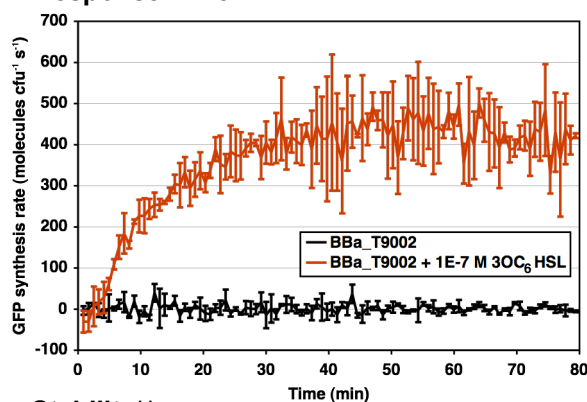
BBa\_C0062: luxR ORF

BBa\_R0062: LuxR-regulated operator

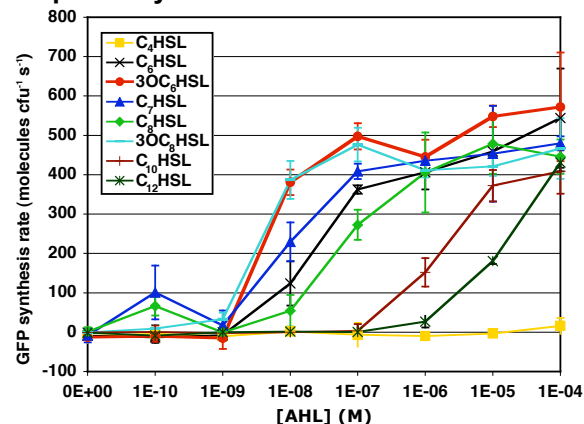
## Transfer Function\*



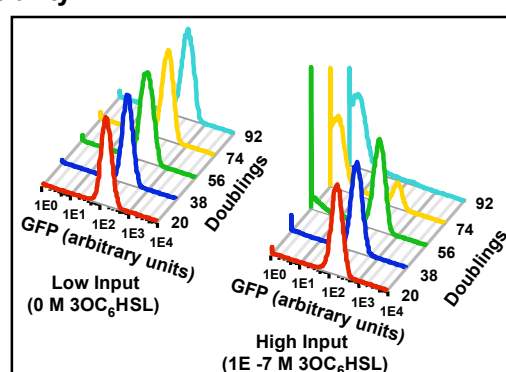
## Response Time\*



## Specificity\*



## Stability\*\*



Signaling Devices

## Demand (low/high input)

**Translational:** 256/8048 ribosomes cfu<sup>-1</sup>  
3.8E3/1.2E5 charged tRNA cfu<sup>-1</sup> s<sup>-1</sup>

## Compatibility

**Chassis:** Compatible with MC4100, MG1655, and DH5α

**Plasmids:** Compatible with pSB3K3 and pSB1A2

**Devices:** Compatible with E0240, E0430 and E0434

Crosstalk with systems containing TetR (C0040)

**Signaling:** Crosstalk with input molecules similar to 3OC<sub>6</sub>HSL

## Stability (low/high input)

**Genetic:** >92/74 replication events\*\*

**Performance:** >92/74 replication events\*\*

## Conditions (abridged)

**Output:** Indirect via BBa\_E0240

**Vector:** pSB3K3

**Chassis:** MG1655

**Culture:** Supplemented M9, 37°C

**\*Equipment:** PE Victor3 plate reader

**\*\*Equipment:** BD FACScan cytometer

Registry of Standard Biological Parts

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